

Remarks

This amendment is submitted to correct the omission of “calcium oxide” from Claim 1. Calcium oxide appears in Claims 9, 14, 15, 16, and 17, which depend from Claim 1. Claim 14 was also corrected so that it is consistent with paragraph [0017] of the specification. The Examiner is requested to enter this amendment to avoid confusion on appeal.

The Examiner, in her Advisory Action, has clarified her rejection over Anderson and Applicant now understands that she is relying upon Anderson’s discussion of the prior art in the second paragraph of column 2. In particular, the following sentences from that paragraph are believed to be relevant:

“A number of processes have also been developed for a chemical water softening of waters which contain hardness ions such as calcium and magnesium. Typically, these processes comprise the addition of calcium hydroxide alone or in combination with sodium carbonate to reduce the solubility of the dissolved calcium carbonate in the water. Typical of such treatments is that disclosed in U.S. pat. No. Pat. 3,740,330. These treatments, however, are not generally applicable to desalinization treatments because they do not sufficiently reduce the concentration of scale-forming dissolved salts in the processed water.”

These sentences refer to the chemical water softening of hard water, not to sea water. “Hard water” is fresh water that contains high amounts of dissolved calcium and magnesium; it does not contain over 10,000 ppm of dissolved salts, as sea water does.

The last sentence in the above quote from Anderson teaches that those treatments are “not generally applicable to desalinization treatments,” which teaches against using those treatments on sea water.

The cited sentences refer to Kneale U.S. Patent No. 3,740,330 (copy enclosed) as typical of the water softening process. The Kneale patent is for a process of reducing the volume of sludge that is formed when water is chemically softened. Kneale treats "surface waters as well as clear well waters." (Column 4, line 13.) This is fresh water, not sea water, and it contains little or no sodium chloride, and it certainly contains less sodium chloride than do the waters treated by Anderson, which include salty brackish waters, so it is less relevant than Anderson. Thus, the second paragraph in column 2 of Anderson does not teach the use of that treatment with sea water.

The fact that a chemical will work in one process does not make it obvious that it will function the same way in other chemical processes that have different compositions. As Anderson points out in column 3, lines 15 to 24, some chemical processes, such as Anderson's, that work fine even in salty brackish waters, will not work in sea water, which contains more than 10,000 ppm of dissolved salts.

Applicant's other claims are directed to particular aspects of Applicant's invention that are also not obvious over the cited prior art. Claim 6 is directed to a process where "said compound" is recycled only if its concentration is less than 0.1%. The Examiner cites the third paragraph of column 8 of Anderson to show that Claim 6 is obvious, but Anderson is recycling magnesium hydroxide, not one of the compounds required in Claim 6. It is not obvious to recycle one of Applicant's compounds when Anderson requires magnesium hydroxide in order for his invention to work.

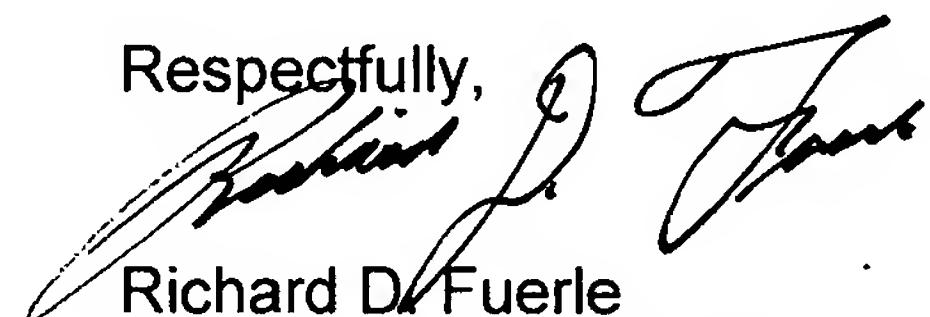
As to Claim 9, the Examiner relies on column 2, lines 18 to 27, of Anderson. But

Anderson is discussing the prior art treatment of hard water, which is fresh water, not sea water.

Claims 14 to 22 require a two-step process that is especially effective in pre-treating sea water (see paragraph [0016]). In the first step, the calcium compounds of calcium hydroxide and/or calcium oxide are added and in the second step the sodium compounds of sodium carbonate and sodium hydroxide are added. Nothing in Anderson or any of the other cited art suggests such a two-step process and nothing in any of the references suggests that particular combination of compounds in the concentrations specified in Claims 14 to 22.

The Examiner is respectfully requested to reconsider her rejection of this application over the cited art.

Respectfully,



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April 13, 2006
CASE MH01